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Dora Rios  
Dora Rios

In re Patent Application of:  
Terrance Moore, *et al.*

Confirmation No. 9723

Examiner: Frenel, Vanel

Group Art Unit: 3626

Attorney Docket No. 044258.000002

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

I, Richard G. Fiscella, state the following:

1. I have a Bachelor of Science degree in Pharmacy (1976) and a Master of Public Health (1985). I am a Registered Pharmacist, having extensive experience in pharmacology and in academia. I have published over eighty research or review papers with an emphasis in ophthalmology, infectious diseases and pharmacoeconomics. I have been the principal or co-investigator on numerous animal and human studies; researcher and speaker for several major pharmaceutical companies and since 1982 have participated in over one hundred ocular pharmacology presentations. Moreover since 1981, I have held several professorships in pharmacy practice. I hold numerous memberships in professional societies one of which is the Academy of Managed Care Pharmacy. I currently am a Clinical Professor in the Department of Pharmacy Practice for the University of Illinois.

2. I am familiar with and understand the subject matter of the above-identified patent application ("Moore et al. Patent Application"). I have studied the application and the amendments to the application, and have also reviewed the recent Official Action dated August 10, 2005, by the United States Patent and Trademark Office and the art cited therein.

3. Specifically, I have read and studied U.S. Publication No. 2002/0152097 (hereinafter "Javors") attached as Exhibit A; I have read the article *Incentive-Based Physician Compensation Models* authored by Kathryn P. Glass, Lisa E. Pieper and Mark F. Berlin and published in The Journal of Ambulatory Care Management, 1999, 22(3), 36-46 (hereinafter "Glass"), attached as Exhibit B; I have read and studied U.S. Patent No. 6,029,138 (hereinafter "Khorasani") attached as Exhibit C; and lastly, I have read and studied U.S. Patent No. 6,370,511 (hereinafter "Dang"), attached as Exhibit D. It is my opinion that the claimed invention, Claims 1-20 of the above-identified patent application, would not be obvious to one of ordinary skill in the art at the time this application was filed. I also believe that one skilled in the art would lack motivation to combine Javors with Glass, Khorasani, or Dang to somehow arrive at the claimed invention.

4. I, however, also offer the following more detailed comments on these issues as well:

4a. Present Claimed Invention: The present claimed invention, Claims 1-20, advantageously provides a method of collecting fees for managing physicians in a healthcare practice participating in an insurance network including modifying physician behavior with respect to ancillary medical costs, thus assisting both the physician and insurance provider in enhancing profitability and identifying physicians that are not profitable because of cost management behavior, that is unique and operationally quite different than other systems and methods I have seen before and as set forth in the patent documents attached as Exhibits A, B, C and D. Further, the establishment of cost norms with predetermined reimbursement amounts, especially with respect to ancillary medical costs, is a significantly different development in view of the cited patent documents. For example, Claim 1 in part features: establishing a relationship between a healthcare consultation group and a healthcare practice to reduce a risk of the healthcare practice not receiving a predetermined reimbursement amount for ancillary medical costs from the insurance network; modifying behavior of at least one physician for management of the ancillary medical costs; and paying funds from a funded incentive pool when the ancillary

medical costs of the plurality of physicians in a healthcare practice do not decrease to a preselected level over a preselected period of time. Claim 8, for example, in part features: establishing a relationship between a healthcare consultation group and a healthcare practice to reduce a risk of the healthcare practice not receiving a predetermined reimbursement amount for ancillary medical costs; establishing a plan to pay funds from the funded incentive pool when the ancillary medical costs of the plurality of physicians in the healthcare practice do not decrease to a preselected level over a preselected period of time; modifying behavior of at least one physician for management of the ancillary medical costs; and distributing predetermined percentages of savings attributed to the modifying behavior of the plurality of physicians ancillary medical cost management if the ancillary medical costs decrease to the preselected level over the preselected period of time. Claim 13, for example, in part features: limiting a plurality of physicians' ancillary medical cost management behavior that is not preferred by the insurance network; modifying behavior of at least one physician for management of the ancillary medical costs; and distributing predetermined percentages of savings attributed to the modifying behavior of the plurality of physicians ancillary medical cost management to at least one of the insurance network and a healthcare management consultation group when the ancillary medical costs decrease to a preselected level over a preselected period of time. The present claimed invention offers a viable solution for managing and optimizing the profitability of physicians in a healthcare practice participating in insurance network.

4b. Recognition of the Source of the Problem:

4b1. Javors: Javors fails to recognize the problems or source of the problems addressed by Moore et al. and thus, fails to provide any solutions for such problems, which, of course, it fails to recognize. Javors describes a benefit plan and a method of administration and health management directed to helping companies and patients manage healthcare costs. Specifically, Javors describes providing a benefit plan comprising a Healthcare Account and an Umbrella Account, collecting premiums for deposit into the benefit plan to form a funded Healthcare and Umbrella Account, processing claims made by a benefit plan beneficiary, disbursing funds from the funded Healthcare and Umbrella Account to pay the processed claims, and distributing any remaining funds in the funded Healthcare and Umbrella Account to the beneficiaries. Javors does not describe a method of collecting fees for managing and optimizing

the profitability of a plurality of physicians in a healthcare practice participating in an insurance network. Nor does Javors described a method of collecting fees for managing and optimizing the profitability of an insurance network having a plurality of physicians in a healthcare practice participating therein. Javors' benefit plan and method for benefit administration is designed to encourage benefit plan beneficiaries (i.e., patients) to become more involved in their healthcare through a system of financial reward, rather than manage and optimize the profitability of the physicians in a healthcare practice participating in an insurance network and the profitability of the insurance network, as well.

4b2. Glass: Glass fails to recognize the problems or source of the problems addressed by Moore et al. and thus, fails to provide any solutions for such problems, which, of course, it fails to recognize. Glass describes a physician productivity-influencing model to increase the number of patients seen by a physician, which outlines the development of performance-based incentives which may be used by medical practices to reward goal-oriented behavior and serve as a basis for bonus plans. Accordingly, Glass is not directed to collecting fees for enhancing management of a plurality of physicians or an insurance network. For example, Glass first describes compensation methods utilized at progressive phases of capitation. The Glass model includes Introductory, Transitional, and Substantial phases, each of which emphasizes productivity. The Introductory phase emphasizes "[t]he more procedures performed and patients seen, the more physicians are paid." The Transitional phase emphasizes that "[r]ewards are structured mainly around productivity." The Substantial phase emphasizes that "[a]s physicians become more efficient, they must be motivated to care for larger populations in order to keep their productivity at appropriate levels." Glass, in paragraph 7, cursorily suggests that the practice would have an objective of "decreased use of ancillary services," but does not elaborate further. This indicates to me that "ancillary services" is not recognized as a significant source of any of the problems faced by Glass. In the context of the paragraph, Glass is simply stating that because the groups are inefficient, this lack of efficiency causes activities that were once profitable to be loss leaders. Hence, it suggests that any use of ancillary services, regardless of their variations in cost among those potentially selected, is inefficient. This description then provides two suggested incentive plans for the practice during this phase, both of which are productivity and efficiency oriented. Thus, it is clear that this reference to "decreased use of ancillary services" as one among many objectives directed to increasing

efficiency and productivity and is not directed to recognition of the benefits of distributing savings among physicians from reduced ancillary costs. Additionally, in the description of the Substantial phase in paragraph 31, and without further elaboration, "ancillary utilization" is mentioned within "utilization and cost of service" which is among a list of performance measurements. This indicates to me that "ancillary utilization" is a performance factor rather than cost. Additionally, Glass does not, for example, describe gathering data on each physician in a healthcare practice regarding management of ancillary medical costs or modifying physician behavior of those physicians determined to be not profitable. Such behavior modification can be an important control factor in providing a solution to the problems identified in the Moore et al. Patent Application. Therefore, it seems clear that Glass does not recognize the source of the problems identified in the Moore et al. Patent Application. That is, Glass does not understand and therefore does not describe solutions related to controlling ancillary costs, collecting fees, creating incentive pools, nor modifying physician behavior to address the ancillary medical costs, as claimed in the Moore et al. Patent Application.

4b3. Khorasani: Khorasani further fails to recognize the problems or solutions addressed by Moore et al. and thus, fails to provide any solutions for such problems, which, of course, it also fails to recognize. Khorasani is directed to solving problems related to diagnosing patient symptoms, i.e., which diagnostic and therapeutic tests are most appropriate for a physician to select to use on a patient based on results of similar tests used on other patients. In other words, the problems recognized by Khorasani relate to the selection of inappropriate or ineffective tests on patients "by sparing patients from unnecessary procedures which may delay time to reach a correct diagnosis or may subject the patient to unnecessary risks." Therefore, Khorasani also does not recognize or understand the source of the problems identified in the Moore et al. Patent Application, and thus, does not describe solutions related to controlling ancillary costs, collecting fees, creating incentive pools, nor modifying physician behavior to address the ancillary medical costs, as claimed in the Moore et al. Patent Application.

4b4. Dang: Dang also fails to recognize the problems or solutions addressed by Moore et al. and thus, fails to provide any solutions for such problems, which, of course, it also fails to recognize. Management can be defined to include both administration and control. Dang focuses on "*administration*," whereas the present claimed invention focuses on "*control*." When

addressing a change program, the process should address: (1) what to change, (2) what to change to, and (3) how to cause or affect the change. Dang describes a patient classification system that quantifies services under illness episodes to determine and establish norms and compares them on an adjusted basis to identify excess utilization. The present claimed invention is crucial because it shows how to cause or affect behavioral change and offers a solution for ensuring fee collection. Dang does not offer such a change process or solution, and thus, does not describe solutions related to controlling ancillary costs, collecting fees, creating incentive pools, nor modifying physician behavior to address the ancillary medical costs, as claimed in the Moore et al. Patent Application.

4c. Lack of Motivation to Combine References: The present claimed invention would not be obvious to one of ordinary skill in the art and one of ordinary skill in the art would not be motivated to combine the references. The cited patent documents provide no explicit or implicit motivation to combine nor is there motivation to do so in the problems to be solved by either Javors, Glass, Khorasani, or Dang. More specific comments on this issue follow.

4c1. Neither Javors nor Glass provide explicit or implicit motivation to combine Glass with Javors; nor is there motivation to do so in the problems to be solved by Javors and Glass. Also, from my experience, one skilled in the art would not possess knowledge to try to modify Javors to incorporate the teachings of Glass to try to build the invention claimed in the Moore et al. Patent Application without the benefit of the teachings provided in the Moore et al. Patent Application. With respect to the problems to be solved, Javors describes problems with the current healthcare management model. As described in paragraph [0013], Javors' solution was an overhaul to the current model to form a *patient-centered* healthcare management model primarily directed to patient economic incentives to curtail ineffective or unnecessary treatment, movement to disease prevention vs. treatment, and formation of personalized health service teams. Glass instead describes a *physician* productivity-influencing model which can be used to determine appropriate physician compensation. Thus, there would be no motivation to one of ordinary skill in the art to combine Javors and Glass because the Javors solution (for its problem) focuses on behavior of the *patient* and the Glass' solution (for its very *different* problem) focuses on behavior of the *physician*.

4c2. Additionally, Javors explicitly teaches away from incentive-based physician compensation models including those that include compensation methods utilized at progressive phases of *capitation*, which seek to manage physicians with respect to medical costs, such as that described in Glass. Javors states that "[t]he mechanisms used by the managed care model to control costs have taken the form of *capitation*, negotiated rates of service and, in the most stringent form, penalties for both patients and physicians if the rules are not followed. Little wonder there is a growing patient and provider backlash against managed care." Thus, there would also be no motivation to one of ordinary skill in the art to combine Javors and Glass because Glass' *physician-oriented* solution to its problem would be repugnant to the *patient-centered* principles described in Javors. As such, if the teachings of Javors and Glass were somehow able to be combined in order to formulate the invention as described in the claims of the Moore et al. Patent Application, the result would fail as it would be attempting to implement two diametrically opposed solutions, neither of which being the solution described in the Moore et al. Patent Application.

4c3. Further, Javors specifically teaches away from methodologies, such as that described in the Moore et al Patent Application, which seek to modify the behavior of physicians, stating that "[m]anaged care is ineffective because it attempts to control costs primarily by impacting the supply-sided demand (*physician* controlled) of healthcare delivery. See Javors, para. [0011] (emphasis added).

4c4. Neither Javors, Glass, nor Khorasani provide explicit or implicit motivation to combine Khorasani with Javors and Glass; nor is there motivation to do so in the problems to be solved by Khorasani, Javors, or Glass. Also, from my experience, one skilled in the art would not possess knowledge to try to modify Javors to incorporate the teachings of Khorasani to try to build the invention claimed in the Moore et al. Patent Application without the benefit of the teachings provided in the Moore et al. Patent Application. With respect to the problems to be solved, Khorasani describes problems related to selection of inappropriate or ineffective diagnostic and therapeutic tests. See Khorasani, col. 2, lines 58-67. Although conceivably any physician's practice could be enhanced by the proper selection of diagnostic and therapeutic tests, such was not a problem or the solution identified or discussed in Javors, Glass, or the Moore et al. Patent Application. Further, such *physician-oriented* solution to its problem

would be repugnant to the *patient-centered* principles described in Javors. Additionally, even if Javors, Glass, and Khorasani could be combined, the result would not be the invention as claimed in the Moore et al. Patent Application.

4c5. Neither Javors, Glass, Khorasani, nor Dang provide explicit or implicit motivation to combine Dang with Javors, Glass, and Khorasani; nor is there motivation to do so in the problems to be solved by Dang, Javors, Glass, or Khorasani. Also, from my experience, one skilled in the art would not possess knowledge to try to modify Javors to incorporate the teachings of Dang to try to build the invention claimed in the Moore et al. Patent Application without the benefit of the teachings provided in the Moore et al. Patent Application. With respect to the problems to be solved, Dang describes problems related to inefficiency in the healthcare system. Dang's solution is the formation of a patient classification system that accounts for differences in the patient severity and establishes a clearly defined unit of analysis. See Dang col. 2, lines 5-8. Further, Dang, by stating that "[s]ystems that detect inappropriate coding, eliminate potentially inappropriate services or conduct encounter-based payment methodology are insufficient for correcting the inconsistencies of the healthcare system," not only provides no explicit motivation to combine, effectively teaches away from Khorasani's solution of providing feedback to physicians to improve selection of proper diagnostic and therapeutic tests to elimination of inappropriate services, and thus, provides evidence of why one of ordinary skill in the art would not be motivated to combine Dang with Javors, Glass, and Khorasani.

4c6. Additionally, even if Javors, Glass, Khorasani, and Dang could be combined, the result would not be the invention as claimed in the Moore et al. Patent Application. The hypothetical result (technical failure) would be a healthcare management system that is simultaneously both physician-oriented/centered (Glass) and patient-centered (Javors). The physician centered approach generally focuses on decreasing the beneficial care per dollar provided to patients including decreased use of tests and decreased patient visits per capita. In such approach, physicians receive the monetary benefits of increased productivity/decreased provision of services per capita. The patient centered approach generally focuses on increasing the beneficial care per dollar including increased use of diagnostic tests and increased preventive care patient visits. In such approach, patient beneficiaries receive



monetary benefits of increased productivity. Correspondingly, the hypothetical result would, for example, provide a nonfunctional system which both seeks to compensate physicians to *reduce* the amount of beneficial care per dollar provided (Glass) with the *same dollars* that would be provided to the patient beneficiaries as incentive to *increase* the amount of beneficial care per dollar, i.e., "spend their health care dollars in a more judicious manner" (Javors), thus resulting in a technical failure (dichotomy). Also for example, this hypothetical nonfunctional system would provide incentives to "physicians who tend to use their [own] judgment instead of expensive tests to diagnose" (Glass) while at the same time promote providing "information about. . . the benefits of [increased use of] selected [diagnostic] tests and medical screening" (Javors), resulting in another technical failure (dichotomy). Clearly, the outcome of such combination would be a technical failure that would, for example, not result in a system or methods for: reducing a risk of the healthcare practice not receiving a predetermined reimbursement amount for ancillary medical costs from an insurance network; modifying behavior of at least one physician for management of the ancillary medical costs; or paying funds from a funded incentive pool when the ancillary medical costs of the plurality of physicians in a healthcare practice do not decrease to a preselected level over a preselected period of time, as featured in Claim 1. It would also, for example, not result in a system or methods for: establishing a relationship between a healthcare consultation group and a healthcare practice to reduce a risk of the healthcare practice not receiving a predetermined reimbursement amount for ancillary medical costs; establishing a plan to pay funds from the funded incentive pool when the ancillary medical costs of the plurality of physicians in the healthcare practice do not decrease to a preselected level over a preselected period of time; modifying behavior of at least one physician for management of the ancillary medical costs; or distributing predetermined percentages of savings attributed to the modifying behavior of the plurality of physicians ancillary medical cost management if the ancillary medical costs decrease to the preselected level over the preselected period of time, as featured in Claim 8. It would also, for example, not result in a system or methods for: limiting a plurality of physicians' ancillary medical cost management behavior that is not preferred by the insurance network; modifying behavior of at least one physician for management of the ancillary medical costs; or distributing predetermined percentages of savings attributed to the modifying behavior of the plurality of physicians ancillary medical cost management to at least one of the insurance network and a healthcare management consultation

group when the ancillary medical costs decrease to a preselected level over a preselected period of time, as featured in Claim 13. Without a recognition of the source of the problems identified and addressed by the inventors in the Moore et al. Patent Application, Javors, Glass, Khorasani, and Dang simply could not know and therefore could not describe what to change in order to solve such problems.

4d. Long Felt Need: As described in the background section of the Moore et al. Patent Application, and as observed by me, and based on my experience, there has been a long felt need to recognize the source of the problems and for a solution to the problems identified and addressed by the inventors in the Moore et al. Patent Application, especially in terms of managing and optimizing profitability of the physicians in a healthcare practice participating in an insurance network by modifying the behavior of a physician for management of ancillary medical costs. Notably, as described in paragraphs 4b1 to 4b4 above, neither Javors, Glass, Khorasani, and Dang recognize ancillary medical costs as a source of their problems, and this, further confirms and indicates to me that this long felt need was not met prior to the teachings in the Moore et al. Patent Application including Claims 1-20.

4e. Attempts by Those Skilled in the Art to Fill the Unsatisfied Need: The Background section of the Moore Patent Application, pp. 1-8, objectively describes attempts by those skilled in the art to analyze the healthcare industry to attempt to satisfy the long felt need. This includes use of an office manager to organize and manage medical treatment information in a manner which is preferred by an insurance network, and includes a comparing healthcare provider performance to enhance competitiveness. Further, Javors in paragraph [0011] identifies what it perceives as ineffective solutions to its problem--the current healthcare system model. Because neither Javors, Glass, Khorasani, nor Dang have recognized the source of the problems--ancillary medical costs, they have also not provided an effective solution.

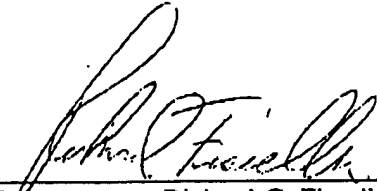
4f. Teaching Away by Those Skilled in the Art from the Technical Direction in Which Terrance Moore Went: As stated above, the Background section of the Moore Patent Application identifies how those skilled in the art have attempted and failed. Further, Javors explicitly teaches away from managing physicians in a healthcare practice group with respect to medical costs by stating: "Managed care is ineffective because it attempts to control costs

primarily by impacting the supply-sided demand (physician controlled) of healthcare delivery." See Javors, para. [0011]. Correspondingly, I do not believe the cited patent documents, Javors, Glass, Khorasani, and Dang, are either related or properly analogous for the issues identified and solved as set forth in the Moore et al. Patent Application.

5. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Sec. 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the publication or any patent issued thereon.

FURTHER DECLARANT SAYETH NOT.

2/9/06  
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# Incentive-Based Physician Compensation Models

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Measuring productivity is important for determining appropriate physician compensation, as indicated by the current emphasis on benchmarking. A combination of benchmarking and individual profiling data may prove useful for developing productivity-based compensation plans. However, while tying physician compensation to multiple indicators is prudent, it is also cumbersome, since indicator values may not be comparable. A compensation model that scales indicators to a common measure, such as a relative value scale, may allow the visual representation of resource utilization, and peer comparisons can assist in adjusting to the accountability demanded by managed care. Key words: *productivity and performance measures, provider compensation, RBRVS, RVUs*

**T**HE ADVENT OF managed care has greatly impacted how medical practices compensate physicians. Traditional distribution methodologies must be adjusted to meet conflicting incentives as a group practice transitions from a fee-for-service system to managed care. Productivity has become less of a driver in compensation formulas but remains important for benchmarking. Strict production-based compensation may not encourage the appropriate changes in practice style necessary to achieve managed care success. The inclusion of performance measures links the compensation structure to the provision of high-quality, cost-effective, and outcome-driven care.

The first section of this article discusses the compensation methods utilized at progressive phases of capitation (introductory, transitional, and substantial). The second section describes the various production- and performance-based incentives associated with compensation formulas. The third section proposes a compensation model that uses relative value units (RVUs) as a measure for determining physician compensation.

## COMPENSATION METHODOLOGIES UNDER CAPITATION

### Introductory phase (less than 25% capitation)

Historically, production-based compensation works well in environments where payment is based on services rendered. The more

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procedures performed and patients seen, the more physicians are paid.

Income is in direct proportion to production. Procedure codes with assigned physician work relative values (e.g., the Resource-Based Relative Value Scale [RBRVS]) are commonly used to quantify productivity and directly link it to practice revenues and physician compensation. A selected percentage of the dollar value of production by each provider is the compensation component.

With a majority of revenue coming from fee-for-service billing or indemnity insurance, there is little need to address utilization and cost-control issues that influence group-oriented behavior. Low productivity by one provider does not necessarily adversely affect others in the group. Conversely, there is no risk to physicians for high utilization.

As a medical practice takes on increasing amounts of risk in managed care plans, per-procedure, production-based compensation schemes become problematic. Transitional compensation plans may be implemented as prepaid revenue increases and behavioral adjustments are needed.

#### **Transitional phase (25–50% capitation)**

As a practice begins to supplement fee-for-service revenues with prepaid revenues, incentives must change within the practice if it is to provide efficient, high-quality medical care. Activities that were once profitable become loss leaders for inefficient groups under capitation. New objectives include larger patient panels, fewer out-of-group referrals, decreased use of ancillary services, increased patient satisfaction, and a greater focus on preventive care.

The new “rules” are challenging to implement. Physicians must be motivated to embrace the paradigm shift necessary for remaining financially viable under managed care. Care should be taken to ensure that the appropriate motivators are in place and that desired behavior is rewarded.

Typically, once a group reaches 30–40% capitation, it begins to modify compensation formulas that previously rewarded only productivity. Specific modifications vary according to group values, practice styles, culture, and socioeconomic forces. New group goals may need to be developed and implemented when setting individual performance standards and benchmarks.

During this transitional stage, fees for service still constitute the dominant source of practice revenue, although prepaid contract revenue is approaching 50%. The challenge during this stage is to devise an income distribution plan that rewards appropriate behavior under both fee-for-service payment and capitation.

#### ***Fee-for-service and capitation mix***

One approach is to align the compensation formula with the reimbursement system. In a mixed fee-for-service and capitation environment, revenues are split by type of reimbursement, then distributed separately using different formulas. This system rewards productivity for fee-for-service plan patients and rewards efficiency for capitated plan patients. The challenge of utilizing this system is maintaining a two-tiered practice style and fairly distributing the capitated portion of the revenues.

#### ***Salary plus production incentive***

This model comprises (1) a base component, which is usually set at 75–80% of expected W-2 compensation, and (2) an incentive component, which provides the opportunity to reward goal-oriented behavior. Rewards are structured mainly around productivity, although performance measures are introduced as capitation increases. Examples of production goals include gross fee-for-service charges, encounters, number of diagnostic tests ordered, and RVUs.

At this stage, benchmarking productivity is critical for maintaining group standards while

transitioning to higher levels of capitation. There are several reasons for this: (1) drops in productivity may be minimized as the group switches to systems that include a salary component, (2) the practice still receives a large portion of its revenues in fees for service, and (3) success under capitation is dependent upon efficiently caring for larger patient panels. The practices must continually plan how its compensation formulas will change as capitation increases.

#### **Substantial phase (over 50% capitation)**

Practices in this phase receive over 50% of their total revenues from at-risk contracts. Revenues are paid on a per member per month (PMPM) basis regardless of the amount of services rendered to panel patients. Since the majority of revenues are fixed, tighter controls on expenses (including physician compensation) are necessary. Groups need to focus on effective patient care management, good contract management, and cost-efficiencies.

Consequently, the importance of performance benchmarking increases. Physicians must work together as a team to ensure the group's profitability. High-quality health care must be provided and be quantitatively measurable in terms of outcomes. However, productivity benchmarks are often overlooked at this stage. As physicians become more efficient, they must be motivated to care for larger patient populations in order to keep their productivity at appropriate levels. As discussed below, declining productivity is a major concern when compensation plans have fewer production incentives.

#### ***Straight salary***

Straight salary pays a predetermined amount of money annually to the physician. One desired effect of a salary-based compensation system is reduced utilization. Physicians are no longer financially rewarded for prescribing additional tests or recommending high-cost treatments. The challenge is to maintain productivity as utilization declines.

Other benefits of a salary system include its simplicity, the security it offers the physicians, and the predictability of practice expenses. It also has the effect of narrowing pay differences between primary care doctors and specialists, which has its advantages and disadvantages.

#### ***Salary plus performance incentive***

Possibly the most effective model in a capitated environment is the salary plus performance incentive compensation method. As described above, there is a base salary component plus an incentive component. Incentives now focus more on performance goals such as efficiency, patient satisfaction, experience, training, administrative duties, committee service, expanded office hours, and on-call time. To be effective, the model should include productivity incentives.

#### ***Challenges***

Specific work standards must be defined so there is a benchmark from which to measure physician performance. The group must agree on how to quantify and measure the factors that determine the bonus. Stable and effective physician leadership is also important for implementing and reinforcing the identified work standards. A feedback system must be implemented so physicians can benchmark their performance and modify their behavior to meet individual and practice objectives.

For both compensation methods at this stage, a portion or perhaps all of physician compensation expenses are fixed. Since the majority of the practice's revenues are also fixed, contracts must be well managed and production goals for the group must be met. Determining the base salary is critical; it should

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***Determining the base salary is critical; it should be substantial enough to allow the recruitment and retention of physicians.***

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be substantial enough to allow the recruitment and retention of physicians.

## **PRODUCTIVITY AND PERFORMANCE MEASURES**

### **Productivity measures**

Measuring productivity is necessary for all phases of managed care, but alone productivity is not a sufficient indicator of overall performance. Both productivity and performance measures must be analyzed to determine whether physicians are providing efficient as well as effective care.

Productivity reports remain a valuable tool in physician education during the transition to a managed care market. Visual representations of resource utilization provide strong incentives for behavioral change under managed care. Ineffective and inefficient groups cannot successfully compete in an environment that demands accountability for all resources expended.

Productivity measures can be reported and key ratios calculated on an individual, group, or specialty basis. With this broad foundation of indicators, the next logical step is to benchmark against other physicians and similar groups within the region. Commonly used measures include total gross charges, total net medical revenue, total cost, RVU production, and other volume indicators.

Success in a capitated environment requires that a careful balance between utilization of scarce resources and fixed revenues be maintained. Limited resources must be spread over more covered lives. The transition demands education and feedback through benchmarking. In addition to benchmarking, productivity data are frequently used to administer compensation formulas and bonus plans, calculate key ratios such as cost per encounter, and monitor physician performance.

Measuring individual productivity provides valuable information on utilization patterns. By studying variations in trending analyses, patterns can be detected. Comparing the num-

ber of patients per physician with the RVUs or procedures per physician, for instance, provides information about the acuity of a physician's patients. Drilling down to the procedure code level for each provider can assist in accurately assessing utilization patterns, profiling changes in use of complex procedures, and/or detecting patient churning.

A medical practice must know its total costs as well as individual procedure costs in order to negotiate profitable contracts. Additional ratios, such as cost to revenue or cost to charges, should also be analyzed to gain a more accurate picture of the entire practice, especially if they are linked to clinical data and backed up by information on administrative duties. Even though arbitrarily set charges are becoming obsolete, they are still used as historical benchmarks. However, negotiating fees based on costs rather than charges is a much smarter way to run a health care business. Comparing costs to actual revenue is a more accurate method of measuring efficiency than using productivity-based measures.

### **Performance measures**

As at-risk income becomes a greater percentage of total revenue, physicians need to be challenged to accept a larger patient panel and eliminate unnecessary procedures while maintaining (or improving) the quality of care and outcomes as well as increasing patient satisfaction. The necessary changes in physician behavior can occur if desired behaviors are properly rewarded. Performance-based reward systems require that the desired performance, quality, and outcomes be measured.

Performance measures should play an important role in determining what the physicians do as a service and in fostering practice behavior that benefits the practice, the payer, the health system, and the consumer. The measures must be collectible and must relate to high-volume, high-cost, high-risk, or high-profile cases. In addition, they must be reliable, valid, sensitive to change when variation

exists, based on a representative sample size, and interpretable.

Areas of performance-based incentives include patient satisfaction, utilization and cost of service, quality of care, administrative duties and collegiality, team work, peer review, and academic teaching and research.

#### *Measures of patient satisfaction*

Measures of patient satisfaction include accessibility of primary care physician, continuity of care, access to preventive care, and service to referring physicians. Patient satisfaction is not limited to just the physicians' behavior; office staff often act as a proxy on the physicians' behalf. In addition, patient satisfaction surveys can be helpful in obtaining contracts with managed care organizations and third-party payers.

#### *Utilization and cost of service measures*

There are a wide variety of measurements included in this category, such as expenditures per RVU, cost per encounter, PMPM utilization, ancillary utilization, use of physician extenders, and average length of stay. In a capitated environment, group practices may reward those physicians who provide a low intensity of service (low RVUs/patient) and provide care of low complexity (low RVUs/procedure) while maintaining minimum workloads. These are physicians who tend to use their judgment instead of expensive tests to diagnose and tend to treat more conservatively. Consequently, these are the physicians who have the lowest costs per RVU and the lowest costs per member per month.

Practice patterns should be analyzed in conjunction with cost of service measures to ascertain whether high-cost patients are being referred out of the network or if physicians are underutilizing services. Risk and severity adjustments must also be used to ensure that physicians are not being unfairly penalized

for having a higher number of severely ill patients in their case mix.

#### *Quality of care indicators*

Quality as defined by Donabedian (1980) has three components: process, structure, and outcome. Process is the artistic way that care is given. Typical indicators include clinical pathways, health status, readmissions, and testing accuracy. Structure consists of the facilities and equipment used in the healing process. These components are typically measured by means of a patient satisfaction survey.

Defined simply as the results of patient care, outcomes are often measured in terms of: acute physiologic stability, complications, cost of care, length of hospital stay, mortality, morbidity, physical functional status, psychosocial functioning, quality of life, and role function. Outcomes are measured through health-related quality-of-life instruments, function health status measures, and disease-specific function tools (sometimes provided by the specialty societies).

#### *Administrative and collegiality measures*

Citizenship is becoming a very important factor in the community's assessment of local health care providers. Physicians can be rewarded for community, charity, and administrative committee work, including group practice administration, guideline development, care review as part of the quality assurance for the health plan, sitting on charitable organization or medical society committees, staffing community health clinics, and providing care to the indigent population.

Teamwork as measured and critiqued by peers and staff is also very important. Similarly, peer review can strongly influence behavioral change if administered properly; it should not be underestimated.



### *Health care system and community measures*

Performance measures used by health plans and hospitals (e.g., Health Plan Employer Data and Information Set 3.0, Joint Commission on Accreditation of Healthcare Organizations, and Health Care Financing Administration criteria) are not directly applicable to physician practices, although some of these indicators are improved through the measurable actions of physicians. Some of these indicators must be measured to meet accreditation standards and could be simultaneously used to reward physicians for completion of charts and medical records, reductions in hospital days or readmission rates per population, and improvements in population health measures (e.g., childhood immunization rates and birth weights).

### *Academic teaching and research indicators*

Research indicators include the ratio of funded grants to submitted grants, the ratio of published articles to submitted articles, the number of peer review articles accepted, salary grant funding, and total grant funding. Physicians can be rewarded for teaching residents and medical students, whether they are on the faculty at an academic medical center or are preceptors in a rural family practice clinic. Research and publications that contribute to medical knowledge can also be rewarded.

### *Challenges*

Patient satisfaction surveys are subjective. Outcome measurements that focus on the patient's psychological method of dealing with his or her illness are also subjective. A patient's outlook can be altered behaviorally without any objective change in the underlying condition, and therefore the measure may not accurately reflect the treatment's effectiveness.

Utilization measures must be adjusted for risk factors and severity so that a physician is not unfairly penalized as a high-cost, high-resource utilizer. Complication rates, repeat encounters, readmissions, and mortality data must be similarly case-mix adjusted.

### *Summary of performance measures*

As physicians move away from productivity-based compensation, there will be an increased need to structure rewards based upon performance. Although performance is more difficult to measure, physicians need motivation to change their practice patterns to lower utilization while maintaining quality of care. Only a limited number of incentives should be used so that the compensation system is simple enough to be understood and adopted by all. Standardization will be necessary within practice groups and between plans to ensure that instruments used for measuring are scientifically valid.

## **RVU COMPENSATION MODEL**

The RVU Physician Compensation Model is essentially a base salary plus incentive compensation model that has both productivity and performance components and utilizes a RVU measurement system. Clinical productivity is measured in RVUs, and any incentive measurements outside clinical activity are proxied into RVUs. Both budgeted performance and actual performance are measured. Medicare's RBRVS is used because the model splits work and practice expense (PE) components by procedure.

To implement, three elements of the model must be in place: base compensation, budgeted performance levels, and budgeted PE levels.

### **Base compensation**

Base compensation is tied to seniority and/or experience, prevailing market rates, and a

percentage of past salary. Initially, the physicians should receive a base salary that fosters recruitment and retention. Eventually, 30–45% of a physician's salary will be paid as a bonus based upon his or her performance, but initially a 15% bonus can be used to introduce the concept.

#### **Budgeted (baseline) performance RVU levels**

The budgeted performance RVUs are composed of  $RVU_{work}$  units for both clinical and incentive activity. First, annual clinical activity is projected and measured in  $RVU_{work}$ . Since nonclinical activity is not normally measured in terms of RVUs,  $RVU_{work}$  proxies must be developed, and physicians within the group must agree upon these baseline or budgeted measures. In the example provided (see box), nonclinical measurements and their  $RVU_{work}$  equivalents (as set by the practice) are as follows:

- medical record accuracy: 10  $RVU_{work}$  for every 1% of accuracy
- annual visits: 1  $RVU_{work}$  per visit
- patient satisfaction: 10  $RVU_{work}$  for every 1% of patient satisfaction

When added to the  $RVU_{work}$  clinical projection, the total budgeted  $RVU_{work}$  is obtained.

#### **Budgeted practice expense levels**

A similar exercise is used to obtain budgeted  $RVU_{PE}$ . Budgeted  $RVU_{PE}$  is derived from the baseline projected clinical productivity. Budgeted dollar support is the projected support for the physician to accomplish the baseline levels of clinical productivity and performance. A hypothetical example of PE is provided in the box; however, in actual practice the figure obtained could be derived from the Medical Group Management Association Cost Survey tables or calculated by dividing total practice expense by total provider full-time equivalents.

It is important to have physician leaders embrace the plan in order to align incentives

with the goals of the practice and to encourage others to adopt new behavior and buy into the new program. Measures selected as the baseline for bonuses must be well defined and concise. Timely payment of bonuses is also important; quarterly payments promote enthusiasm for the compensation plan. Although a variety of incentives can be employed, it is best to focus on just a few that are consistent with the group's strategic goals and not contradictory. The measures must be important to the providers and the entire practice and must relate to actions that the providers have under their control.

#### **Implementing an incentive-based compensation system using RVUs**

Base compensation can be adjusted positively or negatively by measuring the differences between actual performance and budgeted performance for both  $RVU_{work}$  and  $RVU_{PE}$ . Positive differences would result in additional compensation for the physician, whereas negative differences would result in either a payback or future reduction in the physician's compensation. Mathematically the model is as follows:

$$[(\text{Actual } RVU_{work} - \text{Budgeted } RVU_{work}) \times \text{Physician Salary per Budgeted } RVU_{work}] - [(\text{Actual PE per Actual } RVU_{PE} - \text{Budgeted PE per Budgeted } RVU_{PE}) \times (\text{Actual } RVU_{PE} - \text{Budgeted } RVU_{PE})]$$

Actual  $RVU_{work}$  equals the summation of all  $RVU_{work}$  associated with an individual physician's clinical and incentive-related performance. Physician salary per budgeted  $RVU_{work}$  equals physician base salary divided by budgeted  $RVU_{work}$ .

Actual PE is the dollar support needed by a physician to perform his or her clinical activi-

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*Measures selected as the baseline for bonuses must be well defined and concise.*

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**General surgeon**

Base salary: \$175,314\* (straight salary)

Median salary: \$223,388\* (all compensation methods)

Budgeted/baseline performance levels		Actual performance levels	
RVU <sub>work</sub>	3,285	RVU <sub>work</sub>	4,479
Accurate medical records (100%) (10 RVUs per 1%)	1,000	Accurate medical records (98%)	980
Visits (1 RVU per visit; gen. surg. visits @ 25%)	1,126	Visits	1,543
Patient satisfaction @ 95% (10 RVUs per 1%)	950	Patient satisfaction	950
Total	6,361	Total	7,952

**Bonus calculation**

$$(\text{Actual RVU}_{\text{work}} - \text{Budgeted RVU}_{\text{work}}) \times \text{Salary per Budgeted RVU}_{\text{work}}$$

$$(7952 - 6361) \times (175,314/6361) = \$43,849$$
**Total compensation**

Base salary + RVU<sub>work</sub> bonus  
 $\$175,314 + \$43,849 = \$219,163$

**RVU<sub>PE</sub> bonus**

Budgeted PE measurements		Actual PE measurements	
RVUs	2,843	RVUs	3,728
Dollar support ( $\neq$ salary)	\$195,030	Dollar support ( $\neq$ salary)	\$245,622
Dollar per RVU <sub>PE</sub>	\$68.60	Dollar per RVU <sub>PE</sub>	\$65.88

**PE compensation**

$$(\text{Actual PE per Actual RVU}_{\text{PE}} - \text{Budgeted PE per Budgeted RVU}_{\text{PE}}) \times$$

$$(\text{Actual RVU}_{\text{PE}} - \text{Budgeted RVU}_{\text{PE}})$$

$$(\$65.88 - \$68.60) \times (3,728 - 2,843) = (\$2.72) \times (885) = \$2,407$$
**Total compensation**

Base + Work + PE  
 $\$175,314 + \$43,849 + \$2,407 = \$221,570$

\* *MGMA physician compensation and production survey*, 1997 report based on 1996 data.

ties. Actual RVU<sub>PE</sub> is the RVU<sub>PE</sub> associated with actual clinical productivity. Actual PE per actual RVU<sub>PE</sub> is equal to the actual dollar support for a physician divided by the actual RVU<sub>PE</sub>. PE per RVU<sub>PE</sub> equals dollar support

divided by RVU<sub>PE</sub>. This calculation is performed for both budgeted and actual PE.

In the example provided, a general surgeon would receive a base salary of \$175,314, which is contingent upon the surgeon generating

6,361  $RVU_{work}$ . This amount of  $RVU_{work}$  comprises 3,285  $RVU_{work}$  of clinical activity, 1,000  $RVU_{work}$  for accurate medical record documentation, 1,126  $RVU_{work}$  for office visits, and 950  $RVU_{work}$  based upon patient satisfaction scores for the surgeon. In this example, 7,952  $RVU_{work}$  are credited to the surgeon because his or her actual performance exceeded budgeted performance by 1,591 RVUs. The surgeon would then be eligible for a bonus of \$43,849 based upon  $RVU_{work}$  criteria. (Ideally, the group would allocate money for bonuses. If the group targets a mean or median number for bonuses per provider and the total bonus dollars that providers are eligible to receive exceeds the bonus pool, then an adjustment must be made to each provider's eligible bonus amount.)

A physician can also be rewarded for being cost-effective through  $RVU_{PE}$ . The  $RVU_{PE}$  can be considered the economic or efficiency portion of the equation, because the group's cost of operating as well as any and all cost-of-care issues could be addressed within this portion. The constant is the difference between actual and budgeted amounts. If a physician's actual PE per  $RVU_{PE}$  is less than the budgeted PE per budgeted  $RVU_{PE}$ , then the physician would be eligible for a bonus equal to this difference.

In the example (see box), the general surgeon was budgeted practice support of \$195,030 to provide 1,126 visits and the surgery equivalent of 3,285  $RVU_{work}$  and 2,843  $RVU_{PE}$ . Actual activity by this general surgeon was 1,543 patient visits and surgery that yielded 4,479  $RVU_{work}$  and 3,728  $RVU_{PE}$ . Since this surgeon's clinical activity was greater than expected, PE dollars to support this activity

equated to \$245,622. Although actual  $RVU_{PE}$  and dollar support exceeded budgeted  $RVU_{PE}$  and practice support, the actual PE per  $RVU_{PE}$  (\$65.88) is less than the budgeted PE per  $RVU_{PE}$  (\$68.60). Therefore, this general surgeon would be eligible for a cost efficiency bonus equal to the difference between the actual and budgeted PE per  $RVU_{PE}$  (\$2.72) multiplied by the difference between the actual and budgeted  $RVU_{PE}$  (885), or \$2,407 of additional compensation. When this amount is added to the base compensation plus the  $RVU_{work}$  bonus, the general surgeon's total compensation comes to \$221,570.

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As this article has shown, designing compensation plan goals, providing catalysts for changing behavior in transitioning environments, and linking performance to pay while remaining profitable as a medical practice are not easy tasks. The key to success may be to measure performance based on RVUs and develop a compensation plan that directly links base salary and bonuses to high-quality, cost-effective, outcome-driven care.

A variety of production- or performance-based incentives may be used by practices to reward goal-oriented behavior and serve as a foundation for bonus plans. When designing a compensation system, a practice must consider its culture, mission, strategy, and goals; the amount of managed care revenue within the practice; and the systems available for measuring physician performance. These factors will determine which incentives are appropriate for the practice.

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